Question 1: *In Section J of the RFP, do the data specifications exceed the current LANDSAT "continuity" data requirements; specifically, requirements for the VNIR bands (Section 4.2.2.b), Banding (section 6.2.3.2), and Streaking (section 6.2.3.3)?*

Response 1: All the specifications in question are achievable through either whiskbroom or push-broom technology.

The VNIR specification (RFP Section 4.2.2.b) controls the response of the detectors outside the desired portion of the spectral band. This specification is necessary to ensure continuity of data to the 30+ year global land archives and data of a quality that is suitable for scientific research. The LDCM specification is similar to a Landsat 7/ETM+ specification; test records show that Landsat 7 met the LDCM specification in all but one band. Test data for the Advanced Land Imager (ALI) sensor on Earth Observer-1 also show that the LDCM specification was met. Two relaxations of the specification were made as a result of comments on the draft RFP: electrical cross-talk was removed from the requirement (Section 4.2.2.b, last sentence), and a number of detectors are now allowed to fail (Section 2.1.4, Dead, Inoperable or Out-of-Spec Pixels). Therefore, this specification is achievable using the technologies that are expected to be used for the LDCM sensor.

The banding and streaking specifications control digital image quality for users. A streaking/banding specification was imposed on Landsat 7/ETM+, but the relatively small number of detectors used presented few challenges in achieving the specification. As a result of this specification, Landsat 7 data are free of streaking and banding. The designs of push-broom sensors (e.g. Multi-Angle Imaging Spectroradiometer and ALI) and whiskbroom sensors (Landsat 7's ETM+ in particular) are significantly different with respect to the number of detectors and filters required to create digital images. If LDCM utilizes a push-broom sensor, tens of thousands of detectors will be required to create digital imagery. Insufficient control and correction of pixel-to-pixel variations and detector responses will create significant anomalies in the data that will manifest themselves as streaks and bands in the imagery. Such streaks and bands have the potential to render the data unusable for scientific research and applications. These streaking and banding specifications ensure that the characteristics of a particular land cover type will be consistently and uniformly rendered across an image and create digital imagery that fulfills Landsat data continuity requirements. Additionally, these specifications are also achievable using technologies expected to be employed for the LDCM sensor.

Question 2: *In Section I of the RFP, why did NASA structure the termination so that the contractor would need to re-pay all payments back to the Government?*

Response 2: There are two distinctly different termination clauses in the RFP: one for termination for the government's convenience; and, one in the event of contractor default.

Termination for Convenience -- There is no provision for the Government to recover all financing payments in the event of a termination for convenience. Under the clause, the contractor is entitled to submit a termination settlement proposal for reimbursement of allowable costs directly attributable to the termination action. The termination settlement costs must be offset by the amount of financing payments received by the contractor. If the value of these payments exceeds the termination settlement costs, the Government will be entitled to recover the difference.

Termination for Contractor Default -- The clause regarding termination due to contractor default was structured from typical commercial contract language and the previous NASA data buy, SeaWiFS. Repayment to the government of all financing is but one of several options, and occurs only if the company defaults prior to the delivery of any data. Entitlement of the Government to recover financing

payments on undelivered work under fixed price contracts is required by the FAR and is a common commercial practice when financing a product that is to be delivered in the future. Once data are being delivered, repayment amounts in the event of termination for default are pro-rated on a decreasing scale over time; e.g., the more data delivered, the lower the repayment amount. Again, under the Default clause, the Government may seek other remedies than recovery of financing payments (e.g., taking title to equipment in lieu of equivalent financial repayment).

Question 3: *Why did NASA choose this method of termination vice some other termination clause; e.g., repayment to the last milestone?*

Response 3: In addition to replicating customary commercial approaches and the SeaWiFS precedent, a multi-phased approach for repayment tailored to pre- and post-launch phases was selected to protect the contractor as well as the government. In the event of termination for default, the repayment or equipment options provides flexibility for the contractor by allowing fulfillment of "re-payment" obligations based on their financial condition and their desire and ability to continue the commercial mission without the government. Post-launch, pro-rated repayment compensates for contractor data delivered to the time of termination, thus limiting their financial exposure.

Question 4: *Is there some precedence on another termination clause for the clause that NASA chose?*

Response 4: These termination clauses were developed based on common commercial practice when pre-paying for a product. Within NASA, the only program similar to LDCM is SeaWiFS. The LDCM clauses were adapted from SeaWiFS clauses with minor modifications. Additionally, Federal Acquisition Regulations (FAR) requires recovery of government financing payments related to undelivered work under fixed price contracts. This Regulation applies to SeaWiFS and LDCM to the extent that financing payments correlate to data products that are scheduled for delivery subsequent to the default. Deviations from the FAR were granted to add the optional remedies and flexibility NASA placed in the RFP in case of a default.